

This invention

Probe Card

Fig.13A

A plurality of tips

Tip portion

$$10 \leq r \leq 20 \mu m$$

Fig.2

-Tip portions are urged against a plurality of metal pads.

-A probe card for testing an electrical characteristic of a semiconductor device

-A tip breaks an oxide film on a metal pad and the tip contacts with a conductive layer.

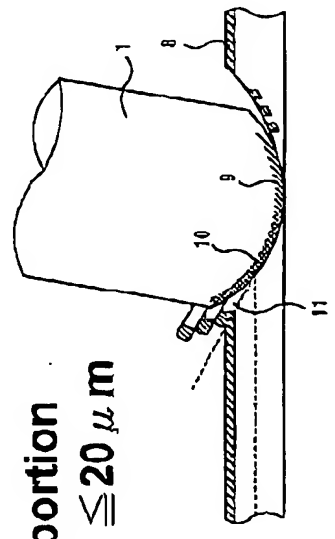
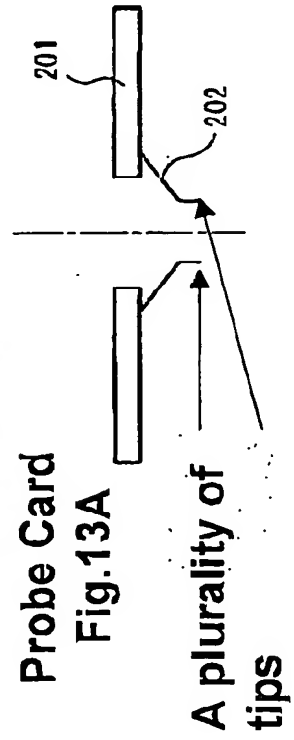
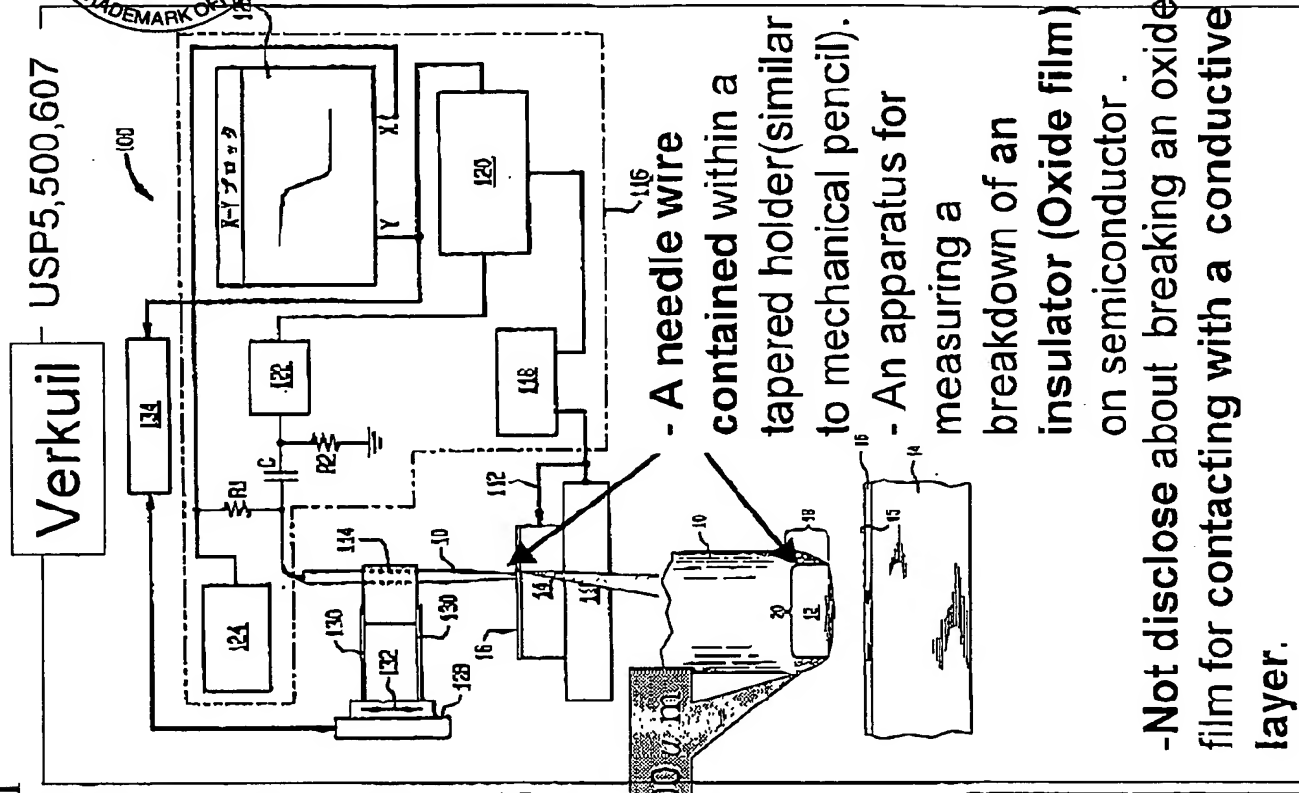


FIG.1



- A needle wire contained within a tapered holder (similar to mechanical pencil).

- An apparatus for measuring a breakdown of an insulator (Oxide film) on semiconductor.

-Not disclose about breaking an oxide film for contacting with a conductive layer.

Verkuil

USP5,500,607



FIG.2

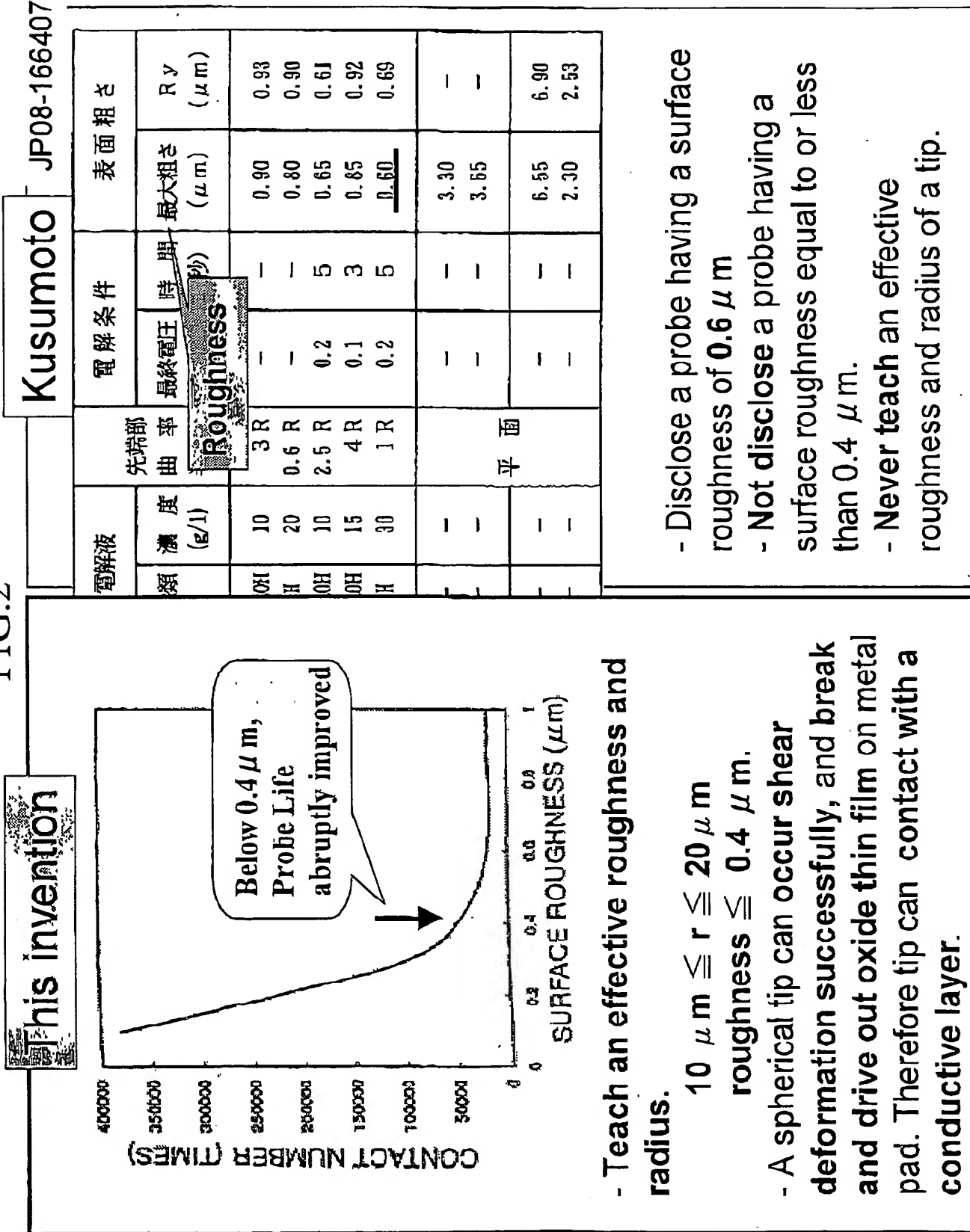
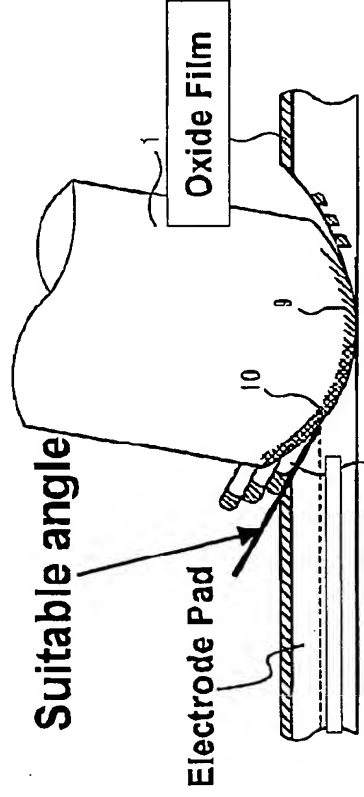


FIG.3

This invention



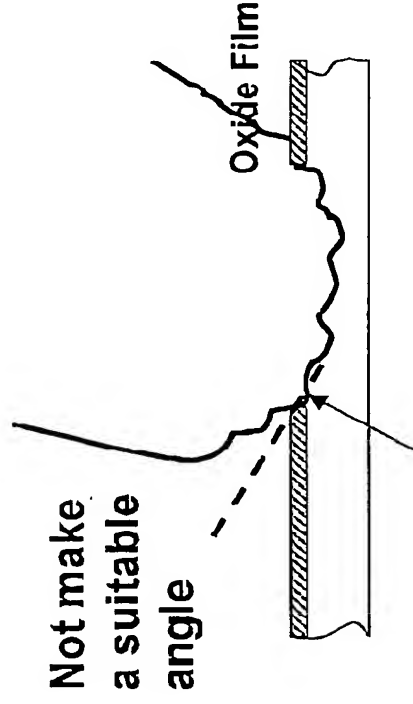
- Suitable radius[r] and roughness of tip

$$10 \mu m \leq r \leq 20 \mu m$$

$$\text{roughness} \leq 0.4 \mu m$$

make a shear deformation successfully, break and drive out oxide thin film on metal pad.

Conventional



Not make a suitable angle

This portion prevents to make a lamination stack

- Conventional tip

Not make a shear deformation, Not break and drive out oxide thin film on metal pad.